

THE DOLICHOPODID GENUS LIANCALUS LOEW.

BY J. M. ALDRICH, MOSCOW, IDAHO.

The genus *Liancalus* contained only one known North American species at the time of the publication of Loew's monograph in 1864; subsequently Osten Sacken in his *Western Diptera* described another. The present paper describes two more. I have not seen either of the earlier species, but it happens that one of the following is a near relative of Loew's, the other of Osten Sacken's, species.

Mik has separated a part of the European members of the genus to form the genus *Alloeoneurus*. None of the known American species are included in this new group.

The females of the following species have few if any available separative characters, except the yellow knees in *genualis*.

*Table of species.*

- 1. First joint of fore tarsi of male shortened. 2.  
3.  
 Second joint of fore tarsi of male shortened.
- 2. Last three joints of male fore tarsi of nearly equal length. *similis*, n. sp.  
 Third joint as long as fourth and fifth together. *querulus*, O. S.
- 3. Knees yellow, *genualis*, Loew.  
 Knees not yellow. *hydrophilus*, n. sp.

*LIANCALUS HYDROPHILUS*, n. sp.

♂. Front concave, green, somewhat overlaid with whitish dust, especially about the angles. Face rather wide, divided just below the middle by a transverse elevation, which

forms two slight arches toward the antennae. Above this elevation the face is concave, shining green; below it, flat and densely silvery-white pollinose. The flat palpi are silvery pollinose with a few black hairs. Antennae wholly black, short, the third joint with a blunt point. Cilia of the orbit black above, white below.

Thorax with a single median row of acrostichal bristles, smaller anteriorly; with two reddish-bronze longitudinal lines (enclosing a golden-green one), abbreviated behind; on each side of these median lines is an area of beautiful blue color; beyond this, near the border of the dorsum, another bronze line, wide, semi-interrupted at the suture, an attenuated portion reaching nearly to the scutellum. The latter with six bristles. Pleurae green, more or less overlaid with a white dust, the metallic color usually showing through but slightly. This covering of white dust extends over the dorsum, except upon the bronze portions. Cilia of tegulae, whitish; halteres yellow.

Abdomen elongated, cylindrical, club-shaped at the apex, from which two long filaments project forward below, each bearing two lateral rows of upward-curving, long whitish hairs; these filaments almost reach the hind coxae. Sides of abdomen with sparse and delicate pile, longer on the anterior segments, forming a distinct posterior fringe on the first segment. General color of abdomen bluish-green, with white dust, except as follows: first segment with narrow brown posterior border; second and third segments with a narrow brownish-black border in front and a wide one behind, somewhat coalescing dorsally in an indistinct line; distal half of the fourth segment and a rather wide dorsal stripe brownish-black; fifth seg-

ment and the clubbed genitalia mostly black. Hair of abdomen yellowish-white, except upon the dark parts, where it is more brownish.

Legs obscure metallic green, the tarsi black; fore coxæ very long, cylindrical, with delicate white hairs and a subapical row of black bristles; second joint of fore tarsi one fourth as long as the third, wider than the others, on the under side with a pad of dense short hairs (tubercles?).

Wings hyaline, a trace of gray across the middle portion, third longitudinal vein curved back to meet the margin behind the apex; beyond this point the margin is a little excised, and close against it lies an almost semi-circular, opaque spot, snow-white in certain lights; this spot is a little nearer the third than the fourth vein; it is enclosed on the proximal side by a distinct, narrow, curved brown spot, beginning behind in the corner of the second posterior cell and continuing around into the marginal, where it gradually fades away along the border of the wing. The fourth longitudinal vein curves strongly backward just before reaching the posterior cross-vein, where it makes an angle; there is another backward curve just at the end, in the brown spot. That section of the fifth longitudinal vein lying beyond the crossvein is about one sixth the length of the crossvein and almost obsolete. The border of the wing is excised deeply behind the termination of the fourth vein, and immediately behind this is produced into a point, minutely blackened at its apex and bearing a pencil of fine black hairs resembling a small bristle. At the end of the fourth vein is another of these pencils, much larger, and the two are convergent, projecting outward and downward.

Length 8.5 to 9 mm.; of wing, 7.5 mm.

♀. Eyes more widely separated; upper half of the face metallic blue, covered with fine corrugations diverging downward; lower half green, more whitish dusted. Palpi large, longer than in the male, grayish-yellow dusted, with black hair. Abdomen of mod-

erate length, borders of the segments more shining green or bronze than black. No distinct spots on the wing, but a very faint cloud at the apex and the same median cloud as in the male. Margin of wing regular in outline; last section of fifth vein distinct, tarsi plain.

Length 7 mm.; of wing, 7 mm.

Black Hills, S. D.; elevation over 5000 feet. Numerous specimens of both sexes.

Closely related to *genualis* Loew, but readily separated by the yellow knees of the latter, and by the marked differences in the wings of the males.

I believe this is the largest species of the family Dolichopodidae so far known; certainly it is the largest North American species.

The habits of this species deserve notice. Schiner says the genus is found in the moist places about waterfalls. I found *hydrophilus* in two places near Custer, S. D., last August. Following up a little rill in a meadow east of town, its origin is found in a deep, round pool, thirty feet across, at the head of a small ravine. This pool is just at the foot of a ledge of rocks some fifteen feet high. From several seams in the rock there is a gentle flow of almost ice-cold water, which covers a considerable area of vertical rock in a thin sheet. Standing in this icy water were my flies! They would scarcely alight on the neighboring dry warm rock at all, but when disturbed merely moved to another part of the water. The second place was between Custer and Harvey Peak. Here a small stream flows through a narrow gap in a high palisade of rock. A dam twenty feet high in the gap creates a small artificial lake. Below the dam is an

area about thirty feet square that is shut in on three sides by masonry and solid rock, the open side being toward the north. In the coolest, darkest, dampest nook at the foot of the dam were a few more *hydrophilus*, not quite standing in the water, but on very moist rock.

Nearly half of my specimens have become greasy since capture,—a very rare trouble among the species of this family. It suggests a modification of their tissues from the normal type of the family to adapt them to the low temperature under which they exist.

LIANCALUS SIMILIS, n. sp.

♂. Differs from the foregoing as follows: thorax much duller in color; hypopygium destitute of filaments, with only minute

lamellae; fore metatarsus hardly one-fourth the length of the following joint, which is a little enlarged, with a slight fringe on the sides and a dense short brush below, the three following joints of equal length; wings on the apical two-fifths clouded with brown, the infuscated area rather indefinite in extent; margin of the wing not excised, third vein ending before the apex.

Length, 6.1 mm.; of wing, 7 mm.

♀. Differs from *hydrophilus* only in having the general color more pure green, without the extreme contrasts of blue and bronze; the wings of one specimen have more brown, which takes the form of three well defined spots, but this is evidently variable.

One male, two females, Washington (state), University of Kansas collection.

The principal differences between this species and *querulus* are in the structure of the male fore tarsi.

## TWO NEW FORMS OF DIASPINAE.

BY T. D. A. COCKERELL, LAS CRUCES, N. MEX.

(1.) *Aspidiotus uvae*, Comstock var.  
*coloratus*, n. v.

♀. Scale about  $1\frac{1}{2}$  mm. wide, broad oval, flat, dull pale orange-brown, exuviae concolorous, thinly covered, first skin rather pale.

♀. Broad pyriform, pale orange. Three pairs of lobes visible in immature specimens, but the middle pair only prominent. In the adult only two pairs of lobes are present, and of these the second pair might almost be described as rudimentary. The middle lobes are close together but not touching, prominent, squared, notched on each side. The plates and incisions are practically as in *uvae*, so also are the anal and genital orifices—though the former in Comstock's figure

(Rep. U. S. Dept. Agr. for 1880) appears to be too small. The terminal segments are striate after the manner of *ostreaciformis*, etc., which I find is also the case with *uvae*. The grouped glands differ a little from *uvae*; as the median group, represented in *uvae* by two orifices, is wanting in *coloratus*; and the anterior and posterior lateral groups of *coloratus* run together, forming one long group of 11 to 15 orifices on each side—or may be separated by a short interval, in which case the cephalolateral group has about 8, and the caudolateral about 9 orifices.

Eggs bright lemon yellow.

♂ scale elongate oval, with the exuviae towards one end.

*Hab.* Las Cruces, New Mexico, 3,800 ft. alt., on *Chilopsis*; scales crowded on the